

CESI Project Summary

It is strongly recommended that you refer to the *CESI Grant Report Form Guidance* document as you fill in this report.

Field	Project Information
Project Overview	
Project Number (#-###)	1-783
Project Name	Salmonid habitat and flow requirements in the Koksilah and Chemainus Rivers - A twinned watershed proposal
Proponent (Organization)	Cowichan Watershed Society
Project Start Date (DD/MM/YYYY)	01/01/2021
Project End Date (DD/MM/YYYY)	31/03/2022
Executive Summary	<p>This project aimed to support two Quw'utsun Nation bands in the Cowichan Valley to conduct field research and analysis on the "twinned rivers", Koksilah and Chemainus, which are experiencing similarly severe hydrologic severe hydrologic extremes, summer drought and winter flooding, due to climate change and land use practices. Both systems are important salmon rivers supporting. Indigenous people, local cultures, ecological health, and economic interests</p> <p>The research will help inform management decisions to improve environmental flows and habitats for fish. The work in the Koksilah River will also specifically support the province's first Water Sustainability Plan development under the Water Sustainability Act.</p> <p>Methodologies: Throughout the summer of 2021, field crews recorded detailed habitat parameter measurements at 29 transects in the fish-bearing lower reaches of both rivers as flows dropped from 25% Mean Annual Discharge (MAD) to 1.5% MAD. This information was modeled to develop Environmental Flow (Eflow) guidelines based on the biological needs of Steelhead and Coho juvenile salmon, Summer Chinook adult salmon and invertebrate (insect) food production in riffled stream habitats. A detailed inventory of meso-habitats (visually distinct units of habitat within a stream) was also completed. Along the adjacent riverbanks, a 100m band of terrestrial riparian habitat was surveyed and analysed for its ability to support healthy fish habitats, as well as other ecological and cultural values. The results were incorporated into a GIS map product (habitat atlas) which is publicly available from the Cowichan Watershed Board's website. In addition, riparian restoration work was carried out in areas identified by the surveys, including invasive species removal, shoreline plantings, and protection of riparian areas on farms. Using social media, an outreach crew created short fun videos from the field to profile local scientists and river stewards at work, building understanding and confidence in the caring competent teams working to restore these rivers.</p> <p>Key accomplishments include the final technical reports and recommendations, community engagement, and relationship building.</p> <p>The Environmental Flow Needs (EFN) Analysis by GeoMorphic Consulting is strong science that will inform future work and has been acknowledged as such by the peer review team, which included senior government hydrologists & fisheries biologists, industry professionals and First Nations.</p> <p>The project also leveraged several inspiring partnerships including supporting indigenous field crews to restore riparian habitats on farms. The project team also had the honour of assisting in the launch of the X'Pav project, in which indigenous</p>
Project Changes	
Was there an approved project change?	Yes
Briefly describe approved project change.	<p>The project received an extension, and alterations to the staffing profile were approved. There was also an increase in the administrative proportion from 10%-12% to allow for an increase in Human Resources work needed to support the large number of temporary workers engaged in the project. The changes were largely due to a need for flexible work schedules to engage the target employment audiences, as well as CoVid-19 and climate factors (unpredictable river levels, extreme fire season). CoVid 19 impacts on First Nations communities included office closures, hiring freezes, and protecting elders from interactions. In addition, the indigenous riparian habitat crew workers that we hired also provide forest fire fighting services, and we lost access to those crew members for several weeks during the unprecedented summer fire season in the interior. Delays occurred in the riparian habitat field work and the indigenous knowledge interviews. Other First Nation crew were lost during the project due to the irregular work hours dictated by the project, which involved responding to water flow levels. Finally, additional projects were added in 2022 thanks to the additional time provided. We were able to leverage partnerships and training developed in 2021 to undertake riparian plantings on farms, with indigenous elders, and with youth.</p>
Was there an approved funding increase?	Yes
Approved funding increase amount (\$)	\$10,000

Briefly describe approved funding increase. These funds expanded the outreach work into the fall, purchased potted plants for riparian restoration, supported work to restore riparian areas on Koksilah farms. A small amount of the additional funds (<10%) was allocated for stream temperature loggers (equipment) that were not needed; those funds were allocated to support a March Break riparian planting workshop with youth and indigenous elders.

Project Lead Contact Details	
Project Leader Name	Tom Rutherford
Project Leader Email	tom@cowichanwatershedboard.ca
Report Author Name (if different than project leader)	Jill Thompson
Report Author Email	jill@cowichanwatershedboard.ca
Project Activities	
Link to climate change adaptation/mitigation/monitoring?	Yes
Climate Change Initiative Action	Baseline information
Primary Action Category	1.2. Land/Water Management: Ecosystem & Natural Process Creation/Recreation (Habitat restoration)
% of project budget towards primary action	80%
Secondary Action Category	3. Awareness Raising: Outreach & Communications
% of project budget towards secondary action	20%
Did you implement all of the proposed activities?	Yes
For activities that were not implemented or completed, please explain in the Environmental Criteria tab (Column Q). If an activity is not captured in the Env. Crit. tab, please explain the activity and why it was not completed here.	Defining Indigenous Flow Needs: interviews were conducted with elders to gather knowledge about the Koksilah River water flow levels, ecosystems and fish. However, these were determined to be preliminary, and a starting point for Cowichan Tribes to conduct more in-depth interviews. We were very honoured and grateful to have had the chance to interview and record memories from one knowledge-keeper before he passed away this spring. A preliminary report was created for Cowichan Tribes, capturing highlights from the interviews, and recommended next steps to deepen understanding of Indigenous Flow Needs, while acknowledging that some of the information shared by elders is not suitable to share with the
Project Results & Discussion	
Summarize project accomplishments.	Please see the overview brochure attached (or at https://cowichanwatershedboard.ca/twinned-watershed/) and the project video here (https://youtu.be/FHZAemLbqYU) for an overview of the work done. The main accomplishments of the project are: <u>1. Employing and training 56 local people, including 13 youth, 16 indigenous, 17 women to gain skills and knowledge in</u>
Describe any challenges/barriers encountered during project implementation.	As discussed with HCTF project staff throughout the project, we did encounter several challenges that required adjustments to the timing and approach to our project, but thanks to the flexibility granted, we were able to divert funds to keep the project focussed on the objectives: <u>- throughout the project, in person meetings with indigenous community members were restricted or not possible due to</u>
Describe any lessons learned, or anything that you would do differently.	Our challenges were primarily environmental and/or personnel health-related issues that were unavoidable, but through weekly meetings of the project leadership we were able to pivot effectively to keep the resources and people focussed on accomplishing the goals. A lesson learned might be to anticipate these challenges from the outset and build in flexibility in <u>any field work situation to respect the reality of our changing climate, compounded by the pandemic.</u>
If your project supported reconciliation with Indigenous peoples and/or advancing the implementation of UNDRIP principles, please describe.	<ul style="list-style-type: none"> •Project was Indigenous-led by Cowichan Tribes Lands and Governance Manager and Halalt First Nation Chief serving as the Steering Committee Co-Chairs •Project was managed by Cowichan Watershed Board which is indigenous co-led by Cowichan Tribes. •There was a focus on job creation and training for Indigenous peoples in watershed ecology and restoration skills, as well
If your project contributed to improving workforce skills in the conservation sector, please describe.	<ul style="list-style-type: none"> •Local people, including indigenous, youth and women, received on the job training in water flows measurements, meso-habitat surveying, riparian plant surveying, invasive species removal, and riparian restoration techniques. •Local senior biologists and project leaders learned cutting edge fish habitat and hydrological flow study methodologies. <u>They also built relationships with potential future field worker and collaborative partners, particularly indigenous partners.</u>
For project activities that focused on data collection/research, please describe how your data/results will be applied to fish/wildlife management.	<ol style="list-style-type: none"> 1. How will you translate your results into actions that improve outcomes for fish and wildlife? •The Koksilah data, maps, reports and working relationships will directly support the Koksilah Watershed Sustainability Planning process, which was initiated in February 2020 between Cowichan Tribes and the Province and formally designated as BC's first WSP area by the Minister of Forests in January of 2022.
Did you produce a technical report? (Attach when submitting this form)	Yes
Technical report citation	1. Geomorphic Consulting. 2022. Koksilah River Environmental Flow Assessment. Report for the Twinned Watershed Project. Prepared for the Cowichan Watershed Board, Duncan, BC. 217 pages / 2 Pritchard, H.D. and C. Steener. 2022

Provincial database submission complete?

No

Communications

Project Spotlight	The Koksilah and Chemainus Rivers, on Eastern Vancouver Island, BC, have been similarly and severely impacted by climate change and land use. In both rivers, low summer water flows and degraded stream habitats are a threat to salmon and salmon communities, including the indigenous people who have lived in balance with salmon in these watersheds since time immemorial.
List any media coverage the project received. (link or attach if available)	This project was widely shared on social media through this dedicated channel (metrics listed in environmental criteria). Postings included more than 12 interviews with watershed stewards and scientists, including 6 with Twinned Watershed
Photo descriptions	Photos are provided in a pdf with captions and credits attached.

Other Comments (optional)

Any anecdotal stories that you'd like to share?	There are 2 memorable moments that stand out regarding this project. Both involve relationship building and/or knowledge transfer and have been mentioned earlier – but both are significant. The first are the unique and important relationships forged through the restoration of riparian habitats on agricultural land by
Any additional comments about your project?	We are pleased that despite many setbacks due to CoVid, forest fires, and human health issues, this project included a significant amount of work with indigenous and settler community members working together and learning from each other. Indigenous contractors accounted for approximately 1/3 of the labour expenses, and the project leveraged other benefits for our indigenous partners such as training, public profile of their good work, and the recording of indigenous flows knowledge.
Any comments or feedback on the CESI program or for HCTF?	We had excellent support and accessibility and encouragement throughout this project. It was a pleasure to work with and report to the Habitat Conservation Trust Foundation to pursue this project together.

Partnerships with First Nations

Indigenous Collaboration?	Yes
Partner Nation	Brief description of partnership/collaboration
Cowichan Tribes First Nation	Co-chair of Project Steering Committee Community members engaged in training opportunities and field work
Halalt First Nation	Co-chair of Project Steering Committee Community members engaged in training opportunities and field work

Partnerships with other organizations

Partner Organization	Partner Role	Partner Sector	Indigenous led organization?
Govt. of BC - FLNRORD	Technical Guidance and advice; FLNRORD reps participated on Technical Advisory Committee and assisted with design and peer review of the EFlows and fish habitat study. Representation from Water Protection, Fisheries, Aquatic Ecology	Provincial/Federal Government	No
Govt. of Canada - DFO	Technical Guidance and Advice; DFO reps participated on Technical Advisory Committee and assisted with design and peer review of the EFlows and fish habitat study. Representation from salmon stock assessment, resource restoration, DFO	Provincial/Federal Government	No
Cowichan Valley Regional District	Technical guidance and advice from Environmental services staff; Access to data (sedimentation study, LIDAR, etc.), and data sharing. Presentation of EFlows Analysis will be presented to CVRD staff.	Municipal/Regional Government	No
Koksilah Connections Project, UVIC	Collaborative partnership. Dr. Gleeson's hydrology work in the watershed informed our work, and Dr. Gleeson participated in the peer review of the EFlows Analysis report. Koksilah Connections project PhD student collaborated with Twinned	Academic Institution	No
Koksilah Working Group	Helped inform landowners and other residents about the field crews at work in the river and riparian areas, and to secure landowner permissions to access land. Will co-organize the community meeting to present findings to residents in Koksilah	NGO (Non-Governmental Organization)	No
Farmland Advantage	Provided funding and guidance to undertake riparian restoration projects on farmland in the Koksilah watershed. The work was done by indigenous community members. The Twinned Watershed project helped initiate this partnership and helped to complete	Industry Groups, Associations, Crown Corps	No
Qw'utsun Cultural Connections – X'pey Project	Collaborated with this group to provide riparian ecosystem expertise for the launching of a cedar restoration project led by Qw'utsun elders.	NGO (Non-Governmental Organization)	Yes
Cowichan Estuary Nature Center	Collaborated with the CENC's spring break program for youth interns to learn from ecological foresters and indigenous elders about riparian ecosystems, and to undertake restoration projects.	NGO (Non-Governmental Organization)	No

CESI Budget

It is recommended that you refer to the *CESI Grant Report Form Guidance* document as you fill in your grant report.
Do not overwrite calculation fields (in red font) as this will result in incorrect total amounts.



You may add additional rows to tables in this sheet if needed. For new rows, copy the formulas in red from the cell above to ensure your project totals are accurate.

A. Labour Costs

Human Resources: Wages & Salaries												
Position	BUDGETED			ACTUAL					VARIANCE			
	Approved Budget from Proposal	Funding Increase Allocation	Total Approved Budget	Type	Number of positions	New hire or additional hours for existing hire?	Project total Person hours	CESI funding Person hours	Rate/hour (incl gst)	Total CESI Spent (=H*KL)	Variance (\$)	Variance (%)
Project Manager	\$12,600.00		\$12,600.00	Contractor		1 Additional hours	240.5	240.5	\$52.50	\$12,626.25	-\$26.25	0%
Operations Manager - Fisheries	\$28,359.00		\$28,359.00	Contractor		1 New hire	518.8	518.8	\$72.10	\$37,436.44	-\$9,077.44	-32%
Honoraria - FN Technical	\$4,800.00		\$4,800.00	Auxiliary		0 New hire		0.0	\$0.00	\$0.00	\$4,800.00	100%
Other riparianity management team	\$6,050.00		\$6,050.00	Auxiliary		0 New hire		0.0	\$0.00	\$0.00	\$6,050.00	100%
Meso-Habitat assessment Sr. Biologist	\$40,000.00	\$500.00	\$40,500.00	Contractor		1 New hire	594.1	594.1	\$84.00	\$49,904.40	-\$9,404.40	-23%
Meso-Habitat assessment Technician	\$28,000.00		\$28,000.00	Contractor		3 New hire	107.9	107.9	\$76.25	\$24,673.95	\$3,326.05	12%
Hydrologist - Indigenous Flow Needs	\$30,000.00		\$30,000.00	Contractor		1 New hire	295.2	295.2	\$105.00	\$31,095.75	-\$1,095.75	-4%
Interview tech - Indigenous Flow Needs	\$5,120.00		\$5,120.00	Contractor		1 New hire	33.6	33.6	\$72.10	\$2,425.50	\$2,694.50	53%
Honoraria- elders, fishers	\$3,840.00		\$3,840.00	Auxiliary		1 New hire	8.0	8.0	\$40.00	\$20.00	\$3,840.00	95%
Eco-forester and plant specialist	\$36,000.00	\$290.00	\$36,290.00	Contractor		3 New hire	125.3	125.3	\$120.83	\$45,430.87	-\$9,180.87	-25%
Riparian mapping/management crew	\$75,600.00		\$75,600.00	Contractor		9 New hire	87.4	87.4	\$91.30	\$71,852.73	\$3,747.27	5%
Tier 2 E-flows Hydrologist	\$37,800.00		\$37,800.00	Contractor		1 New hire	298.2	298.2	\$105.00	\$31,095.75	\$6,704.25	18%
Tier 2 E-flows Field crew	\$38,000.00		\$38,000.00	Contractor		4 New hire	135.0	135.0	\$34.62	\$16,693.18	\$19,306.82	51%
Communications Manager	\$10,010.00	\$250.00	\$10,260.00	Contractor		1 Additional hours	321.0	321.0	\$40.43	\$12,976.43	-\$2,716.43	-26%
Outreach	\$2,000.00	\$2,000.00	\$2,000.00	Staff		1 New hire	480.0	480.0	\$28.43	\$13,644.00	\$8,356.00	38%
Outreach	\$0.00	\$2,000.00	\$2,000.00	Staff		1 New hire	480.0	480.0	\$22.60	\$10,845.60	-\$8,845.60	-44%
Plant ID trainer	\$0.00	\$0.00	\$0.00	Auxiliary		1 New hire	8.0	8.0	\$0.00	\$0.00	\$0.00	#DIV/0!
Riparian restoration project - farms	\$0.00	\$0.00	\$0.00	Contractor		1 New hire	206.9	206.9	\$63.00	\$12,963.75	-\$12,963.75	#DIV/0!
Riparian planting youth camp	\$0.00	\$0.00	\$0.00	Auxiliary		15 New hire	18.6	18.6	\$20.81	\$5,791.42	-\$5,791.42	#DIV/0!
Indigenous riparian Habitat worker	\$0.00	\$0.00	\$0.00	Contractor		1 New hire	28.0	28.0	\$0.00	\$0.00	\$0.00	#DIV/0!
Videographer - indigenous film producer	\$0.00	\$0.00	\$0.00	Contractor		2 New hire	26.7	26.7	\$157.50	\$8,400.11	-\$8,400.11	#DIV/0!
	\$0.00	\$0.00	\$0.00					0.0	\$0.00	\$0.00	\$0.00	#DIV/0!
Total:	\$376,179.00	\$5,000.00	\$381,179.00		49		4,008	4,008	Total:	\$390,066.13	-\$8,907.13	-2%

Explain any differences or variances (> 10%) from the approved budget versus what was actually spent for labour costs (e.g., funded positions, approved budget changes, unspent funds, etc.)

Labour costs have been adjusted and increased slightly to account for a variety of operational changes throughout the project as discussed with HCTF staff (Sarah Brookes) throughout the year, including: Indigenous Flows, Honoraria, and some project management costs were paid by our First Nation Partners so these funds were re-allocated. Fisheries Technician Costs were lower due to external circumstances (crew pulled away for firefighting, health issues). Senior biologists did much of the field work due to lack of crew availability, and unpredictability of river flows.

B. Site/Project Costs

Site/Project Costs										
Site Costs	Description	BUDGETED			ACTUAL		VARIANCE			
		Proposed Budget within BC	Proposed Budget outside BC	Funding Increase Allocation	Total Approved Budget	Total amount spent within BC	Total amount spent outside of BC	Variance (\$)	Variance (%)	
Travel	Travel associated with Project management, Habitat assessment & Indigenous flow needs study. All travel on South Vancouver Island. 161 Travel associated	\$25,100.00			\$25,100.00	#####		\$11,047.45	44%	
Site Supplies & Materials	Field and safety equipment for habitat assessment(4K), Field and safety equipment for riparian program (4K)	\$6,721.00		\$ 4,000.00	\$12,721.00	#####		-\$5,552.01	-44%	
Habitat Atlas generation and Printing		\$9,000.00			\$9,000.00	\$ -		\$9,000.00	100%	
Training & Insurance	First Aid and Swift water rescue, required insurance for field crews	\$11,000.00			\$11,000.00	\$ 9,148.14		\$1,851.86	17%	
GIS and Data Processing		\$20,000.00			\$20,000.00	#####		-\$1,000.00	-5%	
Total:		\$73,821.00	\$0.00	\$4,000.00	\$77,821.00	\$62,473.70	\$0.00	\$62,473.70	\$15,347.30	20%

Explain any variances (> 10%) or differences from the approved budget versus what was actually spent for materials, site/project costs (e.g., approved budget changes, unspent funds, etc.)

Training costs were lower than budgeted. Travel costs were lower than budgeted. Supplies were more expensive, including riparian plant purchases through the \$10,000 grant addition. Habitat atlas generation was moved to the labour section to reflect the nature of the work (GIS analysis, online map production, presentations and support for project reporting), and because labour statistics were provided.

moved to Labour section, no printing

C. Capital/Equipment Costs

Capital Expenditures/Equipment Purchase									
Capital Asset	Description	BUDGETED			ACTUAL		VARIANCE		
		Proposed Budget within BC	Proposed Budget outside BC	Funding Increase Allocation	Total Approved Budget	Total amount spent within BC	Total amount spent outside of BC	Variance (\$)	Variance (%)
					\$0.00	\$0.00		\$0.00	#DIV/0!
					\$0.00	\$0.00		\$0.00	#DIV/0!
					\$0.00	\$0.00		\$0.00	#DIV/0!
Total:		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	#DIV/0!

Explain any variances (> 10%) or differences from the approved budget versus what was actually spent for capital expenditures (e.g., approved budget changes, unspent funds, etc.)

D. Overhead/Administration

UPDATE

Overhead/Administration (eg office space, utilities, office supplies etc).		BUDGETED			ACTUAL			VARIANCE	
Overhead Costs	Description (Please explain how this was calculated)	Approved Budget from Proposal	Funding Increase Allocation	Total Approved Budget	Number of new Admin positions	Additional Admin Person hours	Spent	Variance (\$)	Variance (%)
Administration fee (maximum 13.5% of total request) <i>If the administration fee includes a new administrative position(s) or additional administrative job hours, please include details about number of positions/hours if not included in Labour Costs.</i>	Developing close working relationships with and providing support between project components and project partners; Human resources and contracting; Creating website to house all outputs; Reporting out to CESI and in-kind funding partners; Internal and external communications; Reporting out to First Nation committees and councils, other levels of Government, communities and stakeholders. Admin fee increased to 12% with permission of HCTF grant officer to account for increased HR and accounting needs.	\$50,000.00	\$1,000.00	\$51,000.00	0	1376.4	\$51,000.00	\$0.00	0%
	Admin fee increased to 12% with permission of HCTF grant officer (Sarah Brookes) to account for increased HR and accounting needs during the project.			\$0.00	0		\$10,200.00	-\$10,200.00	#DIV/0!
Sub-contractor administration fee (if not included in Labour Costs)	included above	\$0.00		\$0.00				\$0.00	
Total:		\$50,000.00	\$1,000.00	\$51,000.00			\$61,200.00	-\$10,200.00	-20%

Jill, Tom, Ruby/Jamie, Barry/Chloe, Shawn/Erin, David M

Explain any variances (> 10%) or differences from the approved budget versus what was actually spent for overhead/admin costs (e.g., approved budget changes, unspent funds, etc.)

Permission was granted in November 2021 to increase the overhead percentage from 10% to 12% in recognition of the complexity of this project and managing the many people and organizations involved in its success. Increased overhead from \$50,000 to \$61,200.

CESI Budget & Expenditure Summary

	BUDGETED			ACTUAL	VARIANCE	
	Total amount originally approved by HCTF, as per original proposal	Allocation of Approved Funding Increase	Total Approved Budget		Variance (\$)	Variance (%)
Labour Costs	\$375,179.00	\$5,000.00	\$381,179.00	\$390,086.13	-\$8,907.13	-\$0.02
Site/Project Costs	\$73,821.00	\$4,000.00	\$77,821.00	\$62,473.70	\$15,347.30	\$0.20
Capital Expenditures/Equipment Purchase	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	#DIV/0!
Overhead/Admin Costs	\$50,000.00	\$1,000.00	\$51,000.00	\$61,200.00	-\$10,200.00	-\$0.20
Total CESI Amounts:	\$500,000.00	\$10,000.00	\$510,000.00	\$513,759.83	-\$3,759.83	#DIV/0!

721 difference in original budget vs grant total

Additional comments on project cost

E. Other Funding Sources

UPDATE

Other Funding Sources & Partners					
Name of Organization / Funding Source	In-Kind Type	Describe calculation of In-kind Amount	In-kind Amount	Cash Amount	Total (G/H)
Royal Bank - Tech for Nature grant		For Koksalah WSP process		\$0.00	\$0.00
BC Freshwater Legacy Initiative		For Koksalah WSP process		\$10,000.00	\$10,000.00
WSP SC - Cowichan Tribes, CWB, POLIS, UWC ELC, BCFLI	Services	For Koksalah WSP Steering Committee meetings = sppr	\$75,600.00		\$75,600.00
Twinned Watershed co Chairs	Services	Chief Thomas (Halalt) and Larry George (Quwutsun) - 6	\$1,200.00		
BFP Halalt Chemainus Chinook Revitalization Steering	Services	Funding for Halalt FN to do portions of work in the Twinn-		\$17,000.00	\$17,000.00
DFO - Chemainus Ditson & camera	Goods	Provision of equipment for the Halalt fisheries crew. This	\$96,000.00		\$96,000.00
Pacific Salmon Foundation	Goods	Grant to CF for purchase of equipment to support Koksalah		\$32,000.00	\$32,000.00
BCSNP	Services	Grant to CF for twinned watersheds salmon stock assess		\$1,100,000.00	\$1,100,000.00
DFO, FLNRORD, Cowichan Tribes, Halalt FN	Services	Participation as Tech Advisors to project. 3 TAC meeting	\$4,312.50		\$4,312.50
Healthy Watersheds Initiative	Services	Grant to CF to support the WSP process (and purchase		\$400,000.00	\$400,000.00
FLNRORD Aquatic ecosystem specialist	Services	Contract to supplement Desmorpha consulting time for		\$22,000.00	\$22,000.00
Farmhand Advantage	Goods	Supplies and labour costs to plan and conduct riparian restoration on 6 Koksalah		\$66,137.00	
Cowichan Estuary Nature Centre	Goods	Supplies and labour for a spring break internship in riparian restoration, in partnership with Twinned Watershed riparian assessment leaders			
Quwutsun Cultural Connections	Services	One day Xpey (cedar) tree planting and lunch with elder		\$1,480.00	
Quwutsun Cultural Connections	Services	Lunch for participants in Xpey		\$810.00	
Uvic Koksalah Connections	Services	Integration of Twinned Watershed aquatic research findi		\$850.00	
Koksalah Watershed Working Group	Services	Communications to residents of Koksalah watershed, con		\$360.00	
Cowichan Watershed Society	Services	Honouraria to elders at Xpey event. Board member over	\$2,700.00	\$2,000.00	
Pacific Salmon Foundation	Services	Grant for video production - Why Fish Need Trees. Con		\$1,500.00	\$1,500.00
Total Partner Amount:			\$183,312.50	\$1,650,637.00	\$1,758,412.50

Notes on leveraged funds resulting in additional outcomes created during the project:

"Why Fish need Trees" video - filming and production funded by PSF grant and CWS

Indigenous Flow Needs - interviews supported by broader goals of Cowichan Tribes and Kok WSP. Staffing, guidance, and elder honouraria paid by Cowichan Tribes

Riparian restorations on farms were supplemented and advised through Farmhand Advantage partnership which paid for farmer labour and supplies.

Spring Break camp - all trees and equipment/supplies were provided by CENC

Xpey planting day - all trees, equipment, lunch, etc provided by Quwutsun Cultural Connections.

Xpey - additional \$2000 indigenous honouraria for Xpey project paid by CWS.

Halalt Fisheries biologist supported by Halalt First Nation, along with much of the Chemainus River portions of the project.

Additional comments on partner funding

Total Project Expenditures (ACTUAL)

Total Project Costs		
Total Partners Amount	Total CESI Amount	Project Total
\$1,758,412.50	\$513,769.83	\$2,272,172.33

CESI Economic & Demographic Metrics

It is recommended that you refer to the *CESI Grant Report Form Guidance* document as you fill in your grant report.

A. Job Creation for Target Demographics

	Estimated in Approved Proposal				Actual				Comments / Explain variance
	Total from your proposal Labour Budget	For Women	For Young Adults	For Indigenous Persons	Total from grant report Labour Budget	For Women	For Young Adults	For Indigenous Persons	
Job positions	27	10	5	12	46	17	13	16	An additional 10 jobs, or additional hours for existing jobs, were recorded in the Administration section of the budget (57 total). Two of the indigenous work crews we hired were not able to work the full project due to factors described elsewhere (freighting, intermittent work challenges). Some indigenous workers were paid by other partners, including Halalt First Nation, so not included here. Youth hours were lower than expected; the project attracted mature, skilled workers, including a strong women in STEM component with women filling most leadership roles.
Person hours (CESI funding)	2524	2328	1782	6634	5805.58	5111	1339	1390	

B. Volunteers

Total:	
Volunteer positions	36
Volunteer hours	7

C. Job Creation for COVID-19 Impacted Sectors

How many of the people you hired lost their jobs due to COVID-19 and were previously employed in:	Hospitality (incl. restaurants)							Self-employed	Other impacted sector
	Tourism	Agriculture	Student	Engineering	Retail	Manufacturing			
	2	2							2 workers impacted by cut-backs in international tourism, recreation, casino, public education/engagement

Note on volunteers: 3 elders, 3 farmers, 13 Board members, 2 Chiefs, 3 KFS mgrs, 2 Arcas Media, 1 data support, 1 Kristina Disney - data partner, 1- Indigenous interview support, 2 land access - Janice Frueh, Evans Gravel, Tech cttee and peer reviewers (Jaro, Jamieson, Tom Gleeson, ...) Not including members of indigenous councils and committees, WSP committee members, many X'pey planting volunteers and organizers and other advisors/reviewers of the project.

CESI Environmental Reporting C

It is strongly recommended that you refer to the *CESI Grant Report Form Guidance* document as you fill in your grant report.

Action Sub-subcategory	Put "x" if project takes this action	No of Site(s)	Area (m ²)	Linear metric (m)	No of target species	No of events (e.g. workshops, webinars, conferences, outreach)	No of interactions/ participants (e.g. social media, outreach)	Total hours of training or education	No of outreach materials/ reports produced	Description of activities/actions (e.g. methods, target species, outcomes)	Explain variance from your approved proposal (e.g. activities that were not completed, difference between estimated & reported metrics)
1.1.1 Removing invasives, pests or weeds	x	2 watersheds, 3 si	4156		6					watersheds, Scotch Broom (<i>Cytisus scoparius</i>), English Ivy (<i>Hedera helix</i>), Himalayn Blackberry	3 additional species targeted for removal.
1.1.2 Planting vegetation to improve habitat											
1.1.3 Managing, controlling, or changing hydrological regimes											
1.1.4 Mimicking natural disturbance regimes (flooding, fire) <i>Not for the purpose of removing invasive species, pests or weeds</i>											
1.1.5 Mechanical actions (e.g. mowing, thinning) <i>Not for the purpose of removing invasive species, pests or weeds</i>											
1.1.6 Chemical actions (e.g. liming ponds) <i>Not for the purpose of removing invasive species, pests or weeds</i>											
1.1.7 Biological control (e.g. oil eating microbes) <i>Not for the purpose of removing invasive species, pests or weeds</i>											
1.1.8 Sensory control (e.g. predator urine, noise deterrents)	x	3		1485						Application of sensory deer repellent on all plants	Additional project - Farmland Advantage partnership
1.1.9 Separation / border actions (e.g. fencing, gating/caves)	x	3		350						Cow fences installed to protect newly established and restored vegetation	Additional project - Farmland Advantage partnership
1.1.10 Visitor management (e.g. signage, trail closures/re-routing)											
1.1.11 Implementation of best management practices or land use guidelines	x	2 watersheds, 2 si	12156							Application of Develop with Care guidelines for invasive species and Coastal Invasive Species Committee standards, Chemainus Estuary Site (1156m2) and Bright Angel Park site (11,000m2)	
1.1.12 Debris removal (garbage, natural debris, contaminants)										This action was not completed.	Cleanup, which has benefits in Koksilah estuary.
1.2.1 Removing invasives, pests or weeds	x	1 watershed, 2 site	11002							Targetted species included English Ivy, Burdock and Himalayan Blackberry.	Additional work - invasives removal focused on Chemainus watershed with Halalt First Nation
1.2.2 Planting vegetation to create habitat	x	1 watershed 4 site	7084							Planting cedar at Bright Angel Park and planting and live staking of biodiverse native riparian vegetation at 3 sites along the Koksilah River.	Additional project - Farmland Advantage partnership
1.2.3 Managing, controlling, or changing hydrological regimes										Live staking restoration as described in 1.2.2	
1.2.4 Mimicking natural disturbance regimes (e.g. fire)											
1.2.5 Mechanical actions (e.g. mowing, thinning) <i>Not for the purpose of removing invasive species, pests or weeds</i>											
1.2.6 Chemical actions (e.g. liming ponds) <i>Not for the purpose of removing invasive species, pests or weeds</i>											
1.2.7 Biological control (e.g. oil eating microbes) <i>Not for the purpose of removing invasive species, pests or weeds</i>											
1.2.8 Breaching embankments to restore wetlands (levees, dikes, dams)											
1.2.9 Removing roads, trails or other linear disturbances											
2.1.1 Species-structure creation											
2.1.2 Nutrient / water management	x	2 watersheds		40 KM	4					Support to Water Sustainability planning initiative in Xwulq'wsek-Kokkalah Watershed to ensure Environmental flows for salmonids (and other aquatic organisms). Support to water availability negotiations between Halalt FN and Municipality of North Cowichan on Chemainus River.	
2.1.3 Reproduction management (e.g. manual pollination, maternal penning)											
2.1.4 Disease / injury management											
2.1.5 Movement / migration management											
2.1.6 Interspecific interaction management (e.g. predator/competitor removal, predator exclusion fences)											
2.2.1 Reintroduction of species											
2.2.2 Reinforcement of species											
2.2.3 Assisted colonisation											
2.2.4 Support within the life of an individual (e.g. offsite rehabilitation of injured animals)											
2.2.5 Support / captive breeding over generations											
2.2.6 Gene banking											
3.1.1 Reported and social media	x					26	33,092		103	100 posts on social media, 2 articles Valley Voice, 1 article Enews.	due to changes in the way that Facebook shares posts that are not paid "boosts". There were also coordination issues for the outreach
3.1.2 Ads & marketing	x						5500		11	Ad placed in Cowichan Valley Citizen and Chemainus Courier to inform readers of the TW workers in their areas. Cowichan Station weekly email (500)	

3.1.3	Art	x																		2 professional videos, 12 short Rowing Reporter videos (interviews), 7 webinars in partnership with CWB and Cowichan Valley Arts Council	Additional comms products that could be considered 'art': Salish Eye video featuring TW project. Why Fish Need Trees video. Cowichan Valley Art Council watershed focus for the year in partnership with CWB, including educational webinars and an art show.
3.1.4	Person-to-person engagement	x	50 estimate						9											14 River Day, River Cleanup, Wild Wings, Art Show, Twinned Watershed field demo day for CWB.	
4.1.1	Surveillance/ Patrolling																				
4.1.2	Carrying out investigations																				
4.1.3	Arrest & interdiction																				
4.2.1	Deterring threat behaviors through... 1 Prosecuting alleged crimes 2 Trying alleged crimes 3 Punishing proven crimes (prisons, fine collection,																				
4.3.1	Changing behavior through... 1 Civil law suits 2 Agency enforcement 3 Agency or judicial review																				
5.2.1	Developing better products & practices																				
5.2.2	Promoting better products & practices																				
5.2.3	Removing barriers to adoption of better products or practices																				
5.3.1	"Green" certification of products or services																				
5.3.2	Environmental markets (eg CO2 emissions, water)																				
5.4.1	Direct payments or subsidies for desired behaviors																				
5.4.2	Taxes on undesired behaviors																				
5.4.3	Valuation of ecological services to leverage conservation																				
5.4.4	Monetary awards & prizes																				
5.5.1	Health & social service benefits																				
5.5.2	Security benefits																				
5.5.3	Spiritual / moral / cultural benefits	x	1	3000				1	50 participants											Western redcedar was planted at Bright Angel Park by Cowichan Tribes members and members from the Settler community to help to ensure cedar is present for future generations for First Nations cultural purposes. This is to address concerns about cedar loss due to over harvest and climate change.	New partnership project developed during term of project with Quw'utsun Cultural Connections and the XPey recovery project.
6.1.1	Government protected area																				
6.1.2	Indigenous protected and conserved area																				
6.1.3	Privately owned conservation lands																				
6.2.1	Conservation Encumbrance																				
6.2.2	Purchase of specific resource rights																				
6.2.3	Conservation agreements																				
6.2.4	Certificates of possession																				
6.2.5	Crown land designations																				
6.3.1	Conservation area designation (other than protected areas)																				
6.3.2	Bylaws																				
6.3.3	Land/Water Use Zoning																				
6.4.1	Area based plan (habitat or multi-species focused)	x	2 Watersheds	270 ha		13.5 km of 2 rivers including riverbanks, including consideration of upland effects.														GIS analysis by MC Wright. Environmental Flow Assessment by Geomorphic Consulting. Riparian Vegetation Assessment Report by Kennen Consulting. All contribute to Koksilah Water Sustainability Plan which has now been formally initiated by the Province, with the whole watershed defined as the planning area.	
6.4.2	Species specific plan																				
6.4.3	Planning for thematic projects or programs	x	1 watershed			Toal watershed *20KM														Water Sustainability planning as per WSA. CESI project team provides regular update to authority holders at WSP scoping table including reporting out on recommended Eflows and critical flows; current state of fish habitat and geomorphic processes, etc.	
6.4.4	Logistics plan																				
7.1.1	International law, conventions & treaties																				
7.1.2	National law or regulations																				
7.1.3	State/provincial law or regulations																				
7.1.4	Municipal law or regulations																				
7.1.5	Tribal law & formal customs																				
7.1.6	Private sector/civil society codes																				
7.1.7	Cross-sectoral																				
7.2.1	International policies																				
7.2.2	National policies																				
7.2.3	State/provincial policies	x																		Engaging in first WSP process in BC/developing supporting framework for doing so. CESI project team provides regular update to authority holders at WSP scoping table including reporting out on recommended Eflows and critical flows; current state of fish habitat and geomorphic processes, etc.	
7.2.4	Municipal policies																				
7.2.5	Tribal policies																				
7.2.6	Private sector/civil society policies																				
7.2.7	Cross-sectoral																				
8.1.1	Field Research/Monitoring	x	2 watersheds/multiple sites (est. 20)																	Eflows study; Salmonid habitat inventory; riparian veg. mapping/managing; 29 Suveyed transects (17Koksilah;12 Chemainus) sampled repeatedly (6 times each) using flowtracker; Over 12km of salmon bearing habitat (approx 6 in each river) underwent detailed meso-habitat inventory with every habitat feature measured and recorded	

8.1.2	Desktop/Benchtop research and analysis	x	4 studies								Components of indigenous flows, eflows, habitat and riparian inventory work Tier and Tier two Eflows modeling for both watersheds (Koksilah and Chemainus). Tier one using 5 standard Eflows models and tier two using SEFA 1D model incorporating transect field data from both watersheds.					
8.1.3	Indigenous Knowledge Gathering	x	2 communities				ongoing			6	Indigenous flow needs interviews and report preparation and review, mapping culturally important riparian plant species, Roving River reporter interviews with indigenous community members, overview video with Halalt and Cowichan Tribes interviews	Indigenous interviews were not possible as planned due to the pandemic restricting access to elders, and a backlog of work for these same elders. Limited interviews were possible, and later in the project timeline than ideal. The riparian restoration crew members were very knowledgeable in medicinal plant use and shared that knowledge with the Riparian Assessment lead.				
8.1.4	Local Ecological Knowledge Collection	x									Interviews with Quw'utsun and Halalt elders and knowledge holders. Engagement of Technical advisory committee with representatives from Sr. Govt. resource management agencies, ENGO's and First Nations. 2 Technical Advisory group meetings and 3 steering committee meetings. Work with farmers to develop riparian restoration projects for their own land. Participation in Spring Break restoration camp which included daily "lunch and learns" from local ecological and cultural leaders.	Farmland Advantage and Spring Break restoration camp both engaged local people in interactive discussion with our project team, sharing local knowledge and adapting plans accordingly.				
8.1.5	Public Opinion Research	x	1							4	1	280	1	Modus contract in Koksilah watershed (in-kind)	Funded by Province, not a CESI product	
8.2.1	Project level evaluations	x												Presentation of methodologies and results of Eflows analysis work with robust feedback/ Q&A sessions at technical advisory committee meetings (2) as well as with Quw'utsun Tribes technical staff, Quwutsun Fish committee (3) Koksilah WSP technical advisory team, Cowichan Watershed Board, agricultural community. 2 additional meetings to present the findings for feedback from the community and Regional governments are forthcoming.		
8.2.2	Cross-project or program comparisons	x												3 meetings of "Twinned watersheds Steering Committee with representation from Cowichan Tribes (Land and governance director) Halalt FN (Chief), CWB (executive director) and CESI technical lead.		
8.2.3	Systematic reviews of action effectiveness															
8.2.4	Results summaries and reports	x												Final reports indicating results, recommendations and lessons learned: Koksilah Eflows Analysis report and Executive Summary report. Chemainus Eflows Analysis report (mostly funded by Halalt funds, but CESI partnership supported this). Riparian vegetation assessment in the Chemainus and Koksilah watersheds. Report for the Twinned Watershed Project, Indigenous Flow Needs summary for Koksilah (internal to Cowichan Tribes). Project Summary brochure.	Aquatic research reports were provided by Geomorphic for each watershed instead of having one Eflow report and one Habitat report. Riparian assessment reports were combined into one report for both watersheds. An additional 4 page Project Overview booklet was added to support communications and show all project elements in one place, particularly with the First Nation Councils.	
9.1.1	Primary education															
9.1.2	Secondary education															
9.1.3	College or university education															
9.1.4	Adult / continuing education															
9.2.1	Hands-on coaching & technical assistance	x					Ongoing throughout pr			2729	n/a			Professional staff providing mentorship to local hires (including indigenous and youth)		
9.2.2	Workshops & professional development training courses	x								16		160		Swift water rescue and wilderness first aid courses	11 additional people were trained by hosting our own First Aid and Swiftwater courses, and offering additional spots to indigenous	
9.2.3	Developing training materials and programs															
10.1.1	Project level administration and delivery	x											ongoing	CESI grant management and all contract management associated with it carried out by CWB, including expansion of financial management capacity, development of contract management capacity, reporting to funders, reporting to all partners, and seeking decisions and approvals as needed from Chief and Council Cowichan Tribes and Halalt FNs, the Koksilah WSP Steering Committee and other watershed governance organizations.	Admin fee was increased from 10% to 12% during the project with approval from HCTF in recognition of additional human resources tasks (contracting, invoicing, coordination, onboarding new staff) for the larger number of people needed to complete the project.	
10.2.1	Direct support services (in-kind)															
10.2.2	Organizational establishment & incubation (formal establishment of new organizations, groups, initiatives)															
10.2.3	Developing / providing organizational services (co-ordinating roles)															
10.2.4	Providing financial support for hiring workers/employees															
10.3.1	Forming relationships	x												Integrated steering committee meetings and on-site visits involving Koksilah and Chemainus representatives. Developing protocols to ensure DRIPA in watershed science projects. 3 steering committee meetings involving Sr. staff and elected officials from both Nations where overarching policy and protocol issues were discussed and agreed upon. Communications projects that improved understanding between watershed stewards of what each other are working on.		
10.3.2	Maintaining or strengthening relationships	x								8		64	24	n/a	Strengthening watershed based partnerships (eg. Koksilah - Cowichan tribes, CWB, CVRD, KWG, etc.). New partnership between CWB and Halalt FN was forged and strengthened throughout the life of the project. New partnership formed with Farmland Advantage to increase riparian restoration opportunities and efficiencies; Partnership with CVRD parks and volunteer coordinator to enable riparian restoration in CVRD park; partnership with Cowichan Estuary nature centre focused on youth empowerment, training and employment through riparian restoration work	
10.3.3	Facilitating consultations/engagement (e.g. providing financial support)									8		32	24	n/a		
10.3.4	Knowledge sharing	x												Knowledge sharing within staff, and between staff and landowners (e.g., Riparian crew lead sharing knowledge of indigenous plant use with youth crew and eco-forester/plant specialist, or the sharing riparian vegetation/invasive plant findings with landowners). Roving River Reporter program shared knowledge through interviews (Facebook/Instagram). Why Fish Need Trees video. Presentations of final reports to 6 audiences.	New communities involved in the project and knowledge sharing included Khowutsun Forest Service staffing partner, Koksilah watershed farmers, Quw'utsun Cultural Connections elders, Spring Break youth restoration camp participants, everyone interviewed by Roving River Reporters, technical experts participating in presentations of the results.	
							ongoing/constant			8		5865.58	see section 3			

10.4.1	Securing/raising funds needed to complete consevation actions	x									<p>This work will facilitate leveraging the funds needed to complete the Koksilah WSP by more clearly defining the solutions needed. CESI resourcing was used to leverage partnership funding and inkind support from Farmland advantage, Cowichan Estuary Nature centre, Cowichan Valley Regional District. Outcomes from project contributed to clearly defining the need for a WSP as supported by Ministerial order MB signed Jan. 13, 2022</p>	<p>CESI resourcing was used to leverage new partnership funding and inkind support from Farmland Advantage, Cowichan Estuary Nature centre, Cowichan Valley Regional District, and Quw'utusun Cultural Connections. The robust and highly praised technical research produced will be a strong foundation for future funding in pursuit of Twinned Watershed report recommendations.</p>
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